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10/560,522	12/13/2005	Yoshio Harada	P28972	6373
7055	7590 10/05/2007		EXAMINER	
	1 & BERNSTEIN, P.L.C. D CLARKE PLACE		GUGLIOTTA, NICOLE T	
RESTON, VA	20191		ART UNIT	PAPER NUMBER
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10560522	12/13/2005	HARADA ET AL.	P28972

GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191

**EXAMINER** 

Nicole T. Gugliotta

**ART UNIT PAPER** 

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Examiner adds the following prior art to the references cited:

Materials Research Bulletin Volume 16, Issue 4, April 1981, Pages 453 - 459



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## Properties of black Y<sub>2</sub>O<sub>3</sub> sintered bodies

#### Y. Tsukuda

Central Research Laboratory Hitachi Ltd. Kokubunji, Tokyo 185, Japan Received 26 February 1981. Available online 6 May 2003.

#### **Abstract**

Black  $Y_2O_3$  pieces are obtained by heating in a reducing atmosphere, and they have some properties other types of  $Y_2O_3$  do not have. In this study, hardness, transmittance and thermoluminescence of black  $Y_2O_3$  sintered pieces are investigated.

The Knoop hardness numbers of the black  $Y_2O_3$  pieces vary from 615 to 804 kg/mm², and the average hardness number is 699 kg/mm², which is nearly equal to that of a colorless piece. In-line transmittances of the dark  $Y_2O_3$  pieces in the  $0.2\sim11$  µm wavelength are lower than those of colorless pieces. The trap level of the black  $Y_2O_3$  pieces is 1.22 eV.

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